INSTITUTE	**FACULTY OF TECHNOLOGY**
PROGRAM	**BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING)**
SEMESTER	**3**
COURSE TITLE	**LAND SURVEYING TECHNIQUES**
COURSE CODE	**01CI1308**
COURSE CREDITS	**1**

Objective:

1 Surveyors play a crucial role in the construction and development industry. The importance of surveyor skills lies in their ability to provide critical data and information that is essential in the planning, design, and construction of buildings, roads, bridges, and other infrastructure.

Course Outcomes: After completion of this course, student will be able to:

1 Apply temporary adjustment of survey instruments as per standard methods
2 Conduct linear measurements using survey instruments and tools
3 Evaluate levelling and cross sectioning survey
4 Apply setting out operations for buildings/ other structures
5 Analyze topographic survey

Pre-requisite of course: Basic of Surveying

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	2	0	0	0	50	0

Contents : Unit	Topics	Contact Hours
Total Hours		

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Carry out temporary adjustment of survey instruments as per standard methods** Locate the station mark on the ground surface & place the tripod over the station mark, Fix the instrument on the tripod head & Level the instrument by adjusting the legs of tripod	2

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
2	**Conduct linear measurements using chain and measuring tape for measurement in plans and slopes** Interpret site drawings, layout plans, and boundary maps, Estimate the optimal length of chain required for measuring the required, Select suitable tools, instruments and marking materials for conducting required work	4
3	**Conduct linear measurement using total stations** Identify the location of master and secondary control points to set up the instrument, Identify the suitable benchmark as a reference to obtain a back-sight at station, Operate the total station instrument to compute and record the required data	4
4	**Carry out leveling and cross section survey using total station** Interpret the scope of survey and data to be collected, Identify and locate the benchmark on the field as instructed by the surveyor, Input the data regarding survey job, station point, type of measurement, RL of benchmark etc. as required by the instrument, Obtain the RL(reduced level) of the staff point by bisecting the reflective prism and instructing the instrument to calculate the RL	6
5	**Carry out setting out operations** Locate and identify the survey pegs or control point and mark the boundary lines, Calculate the distance and direction of building line from the boundary or base line as per plans/drawings, Identify all the grid lines /numbers provided on the plans/drawings and establish them on the ground using string and pegs, Determine the corner of building on set building line to true measurement from adjacent boundary and mark the same as per drawings and specifications	6
6	**Carry out topographic survey** Identify the boundaries of the area to be surveyed, Identify a suitable location for setting up a total station such that maximum points or features are visible from this point, Transfer/upload the recorded data on the computer system using appropriate CAD software, Plot the recorded points using the CAD software to get the required contour/ topographic map as per the measured distance location, levels and angles	8
7	**Industrial Visit/ Field exposure** Industrial Visit/ Field exposure	4
Total Hours		**34**

Textbook :

1 Surveying Vol. I & II, Duggal, S. K., Tata McGraw Hill Publication, New Delhi, 2007

References:

1 Surveying & Levelling, Surveying & Levelling, Subramanian, R., Oxford University Press, New Delhi, 2011

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Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
0.00	10.00	35.00	30.00	15.00	10.00

Instructional Method:

1. At the start of course, the course delivery pattern, prerequisite of the subject will be discussed
2. Attendance is compulsory in laboratory, which carries a 5% component of the overall evaluation.
3. The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in laboratory.
4. All practical's will be performed in the field with the supervision of laboratory in charge.

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